

PATENT COOPERATION TREATY

From the INTERNATIONAL BUREAU

PCT

NOTIFICATION OF ELECTION

(PCT Rule 61.2)

To

Assistant Commissioner for Patents
United States Patent and Trademark
Office
Box PCT
Washington, D.C. 20231
ÉTATS-UNIS D'AMÉRIQUE

in its capacity as elected Office

Date of mailing (day month year) 12 January 2000 (12.01.00)	
International application No. PCT/GB99/02029	Applicant's or agent's file reference P22101/HGR/GMU
International filing date (day month year) 28 June 1999 (28.06.99)	Priority date (day month year) 27 June 1998 (27.06.98)
Applicant TURNBULL, Robert, William	

1. The designated Office is hereby notified of its election made:



in the demand filed with the International Preliminary Examining Authority on:

09 December 1999 (09.12.99)



in a notice effecting later election filed with the International Bureau on:

2. The election ☒ was

was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland	Authorized officer S. Mafla
Facsimile No. (41 22) 746 14 35	Telephone No. (41 22) 336 83 38

PCT COOPERATION TREATY

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NOTIFICATION OF THE RECORDING
OF A CHANGE(PCT Rule 92bis.1 and
Administrative Instructions, Section 422)

From the INTERNATIONAL BUREAU

To:

MURGITROYD & COMPANY
373 Scotland Street
Glasgow G5 8QA
ROYAUME-UNIDate of mailing (day month year)
08 January 2001 (08.01.01)Applicant's or agent's file reference
P22101/HGR/GMU

IMPORTANT NOTIFICATION

International application No.
PCT/GB99/02029International filing date (day month year)
28 June 1999 (28.06.99)

1. The following indications appeared on record concerning:

☒ the applicant ☐ the inventor ☐ the agent ☐ the common representative

Name and Address

ERT LIMITED
Orkney Water Technology Centre
Flotta
Stromness
Orkney KW16 3NP
United Kingdom

State of Nationality

GB

State of Residence

GB

Telephone No.

Facsimile No.

Teleprinter No.

2. The International Bureau hereby notifies the applicant that the following change has been recorded concerning:

☒ the person ☒ the name ☒ the address ☐ the nationality ☐ the residence

Name and Address

NAREMCO TECHNOLOGY INTERNATIONAL
LIMITED
Brooklea
New Pond Road
Compton
Guildford GU3 1HX
United Kingdom

State of Nationality

GB

State of Residence

GB

Telephone No.

Facsimile No.

Teleprinter No.

3. Further observations, if necessary:

The person indicated in box 1 has assigned his rights to the person in box 2.

4. A copy of this notification has been sent to:

☒ the receiving Office ☐ the designated Offices concerned
☐ the International Searching Authority ☒ the elected Offices concerned
☐ the International Preliminary Examining Authority ☐ other:The International Bureau of WIPO
34, chemin des Colombettes
1211 Geneva 20, Switzerland

Authorized officer

Christine Carrié

Facsimile No. (41-22) 740 14 35

Telephone No. (41-22) 438 44 38

PATENT COOPERATION TREATY

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INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference P22101/HGR/GMU	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/GB99/02029	International filing date (<i>day/month/year</i>) 28/06/1999	Priority date (<i>day/month/year</i>) 27/06/1998
International Patent Classification (IPC) or national classification and IPC B01D17/04		
Applicant ERT LIMITED et al.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.



2. This REPORT consists of a total of 6 sheets, including this cover sheet.

☒ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 3 sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☒ Certain defects in the international application
- VIII ☒ Certain observations on the international application

Date of submission of the demand 09/12/1999	Date of completion of this report 05 10 2000
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel +49 89 2399 - 0 Tx 523656 epmu d Fax +49 89 2399 - 4465	Authorized officer Persichini, C Telephone No +49 89 2399 8617 

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/GB99/02029

I. Basis of the report

1. This report has been drawn on the basis of (*substitute sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to the report since they do not contain amendments.*):

Description, pages:

1-12 as originally filed

Claims, No.:

1-12 as received on 18/07/2000 with letter of 12/07/2000

Drawings, sheets:

1/2.2/2 as originally filed

2. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
☒ the claims, Nos.: 13-17
☐ the drawings, sheets:

3. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

4. Additional observations, if necessary:

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/GB99/02029

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes:	Claims	1-12
	No:	Claims	
Inventive step (IS)	Yes:	Claims	
	No:	Claims	1-12
Industrial applicability (IA)	Yes:	Claims	1-12
	No:	Claims	

2. Citations and explanations

see separate sheet

VII. Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

see separate sheet

VIII. Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

see separate sheet

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/GB99/02029

(3) US-A-4 640 781

Re Item V

1. Document (3) discloses all the features of the preamble of claim 1: an apparatus (reference signs according to document (3)) for coalescing droplets G of one phase from a fluid comprising two or more phases (cf (3), column 1, lines 5-10), said apparatus comprising a chamber 1, a coalescing medium comprising a plurality of elongate members 5 each having a surface area, a retaining member 12 to which the coalescing medium is secured, an inlet 8 to said chamber, and an outlet 9 from said chamber, said inlet and outlet being positioned such that fluid flowing from said inlet to said outlet flows in a flow direction in contact with said surface area of said coalescing medium ((3), column 3, lines 1-5), the elongate members extending in the flow direction.

Apart from the features of the preamble, document (3) further discloses that the chamber is formed from a "substantially straight pipe" 1A, 1B (see also item VIII, 1 of this report; besides, in document (3) the chamber shape is selected in order to allow a simple in situ purification of the coalescing medium - it is evident that a "straight pipe" would be utilized, if, as in the present application, such a purification was not desired) having a first end 1D and a second end 1C, said outlet 9 being arranged at the first end and an access cover 1C being arranged at the second end. The access cover is adapted to allow removal and replacement of the retaining member 12 and coalescing medium (in order to avoid leakage of the fluid, it is inevitable that according to the application the cover is also "securely sealed" to the second end of the "substantially straight" pipe; in order to introduce the retaining member and the coalescing medium, it is inevitable that the cover 1C is an "access cover", but even if not so, it is evident to provide a removable cover in order to renew the coalescing medium from time to time, if this proves to be necessary).

Consequently, the subject-matter of claim 1 differs from what is disclosed in document (3) merely in that the chamber pipe has an inlet branch.

The inlet construction of the application has the advantage that the fluid entering the coalescer needs not pass the retaining member (formed as a perforated plate), which may cause an undesirable pressure drop. On the other hand,

however, the inlet branch has the disadvantage of an uneven flow distribution which may even culminate in dead spaces, and of an incomplete utilization of the length of the elongate members of the coalescing medium. Alternatively, it is also possible to reduce the pressure drop by utilizing an "eye" as retaining member as disclosed in document (3), column 4, lines 7-10. This alternative, however in contrast to the perforated plate, does not allow a homogenous distribution of the elongate coalescing members over the cross section of the pipe and may additionally also lead to an uneven flow distribution.

The different constructions (perforated plate with inlet branch - perforated plate without inlet branch - eye without inlet branch), their advantages (homogenous distribution of the elongate coalescing members and low pressure drop - homogenous distribution of the elongate coalescing members, even flow distribution and complete utilization of the length of the elongate members - low pressure drop, complete utilization of the length of the elongate members) and their disadvantages (uneven flow distribution and incomplete utilization of the length of the elongate members - high pressure drop - uneven flow distribution and inhomogeneous distribution of the elongate coalescing members) are evident for the skilled person. So he selects the possibility of claim 1 without the exercise of any inventive skill, if he is prepared to accept the disadvantages connected to this construction.

Claim 1 does, therefore, not meet the requirements of Art. 33(3) PCT.

2. As it is evident that the non-inventive coalescing apparatus of claim 1 is to be utilized in the way defined in method claim 10, the subject-matter of this claim does also not meet the requirements of Art. 33(3) PCT.
3. In the light of the cited document and the general knowledge of the skilled person the features of the dependent claims appear to be either known or result in an evident manner from the circumstances and design considerations.

Re Item VII

The description is not in conformity with the claims as required by Rule 5.1(a)(iii) PCT.

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/GB99/02029

Re Item VIII

The present set of claims does not meet the requirements of Art. 6 PCT.

1. The expression "substantially" preceding some of the constructional features of independent claims 1 and 10 (and of the dependent claims, as well) renders the claims unclear. It goes without saying that embodiments with minor deviations from the perfect realization of a claimed geometrical shape are also included by such a feature. However, the introduction of the term "substantially" suggests that important deviations shall also be possible, so that the features in question do not at all mean a restriction for the claimed subject-matter.
2. The features of claim 2 seem to be redundant with regard to the features of claim 1. Therefore, claim 2 is unclear and renders claim 1 also unclear.
3. Page 5, lines 6-11 seems to be in contradiction to independent claim, rendering thus this claim unclear.
4. The imprecise statement in the description on page 12, lines 18-21 implies that the subject-matter for which protection is sought may be different to that defined by the claims, thereby resulting in lack of clarity (Art. 6 PCT) when used to interpret them (see also the PCT Guidelines, III-4.3a).

INTERNATIONAL SEARCH REPORT

International Application No.

PCT/GB 99/02029

A. CLASSIFICATION OF SUBJECT MATTER

IPC 6 B01D17/04 C10G33/06 B01D45/08 B01D39/16

A. Rights to International Patent (Application No. PCT/GB 99/02029) and PCT

B. FIELDS SEARCHED

Minimum documentation searched: Classification system followed by classification symbol(s)

IPC 6 B01D C10G

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 4 640 781 A (HUGHES VICTOR B) 3 February 1987 (1987-02-03) column 1, line 66 -column 4, line 10; figure ----	1-10, 12, 14-17
X	US 3 810 832 A (RHODES H) 14 May 1974 (1974-05-14) cited in the application column 3, line 5-9; figures 8,9 ----	1, 10, 12, 14-17
X	DE 31 11 554 A (SOFRANCE SA) 8 April 1982 (1982-04-08) page 4, line 1-3; figure ----	1, 14
X	GB 970 518 A (TEACO INDUSTRIAL CORP.) 23 September 1964 (1964-09-23) page 1, line 74 -page 2, line 8 ----	1, 2, 10, 12
-/-		

☒ Further documents are listed in the continuation of box C☒ Patent family members are listed in annex

Special categories of cited documents

- | | |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>A document defining the general state of the art which is not considered to be of particular relevance</p> <p>E earlier document but published on or after the international filing date</p> <p>L document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)</p> <p>O document referring to an oral disclosure, use, exhibition or other means</p> <p>P document published prior to the international filing date but later than the priority date claimed</p> | <p>T later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention</p> <p>X document of particular relevance, the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone</p> <p>Y document of particular relevance, the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art</p> <p>Z document member of the same patent family</p> |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

Date of the actual completion of the international search

6 October 1999

Date of making of the international search report

20/10/1999

Name and mailing address of the ISA

European Patent Office, P.B. 6816 Patentlaan 2
NL - 3280 HV Rijswijk
Tel: +31-70 340-2040; Tx: 31 651 4000
Fax: +31-70 340-3016

Authorized officer

Persichini, C

INTERNATIONAL SEARCH REPORT

International Application No.

PCT/GB 99 02129

C (Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Ref. No. Date of Publication Title of Document

X		US 3 405 511 A (HALTER EDMUND J ET AL) 15 October 1968 (1968-10-15) figures	1.14
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INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No.

PCT/GB 99/02029

Patent document to which the report relates	Publication date	Patent family members	Publication date
US 4640781	A	03-02-1987	CA 1252054 A 04-04-1989
			DE 3524640 A 23-01-1986
			DK 314185 A,B 13-01-1986
			GB 2161395 A,B 15-01-1986
			NL 8502005 A 03-02-1986
US 3810832	A	14-05-1974	NONE
DE 3111554	A	08-04-1982	FR 2481140 A 30-10-1981
			GB 2077612 A 23-12-1981
			IT 1135695 B 27-08-1986
			JP 56166908 A 22-12-1981
GB 970518	A	/	NONE
US 3405511	A	15-10-1968	DE 1619839 A 14-01-1971
			FR 1522987 A 23-08-1968
			US 3517486 A 30-06-1970

PATENT COOPERATION TREATY

From the
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

To

MURGITROYD & COMPANY
373 Scotland Street
Glasgow G5 8QA
GRANDE BRETAGNE

PCT

NOTIFICATION OF TRANSMITTAL OF
THE INTERNATIONAL PRELIMINARY
EXAMINATION REPORT
(PCT Rule 71.1)

Date of mailing (day/month/year)	05.10.2000
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Applicant's or agent's file reference P22101/HGR/GMU	IMPORTANT NOTIFICATION
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International application No. PCT/GB99/02029	International filing date (day/month/year) 28/06/1999	Priority date (day/month/year) 27/06/1998
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Applicant ERT LIMITED et al.

1. The applicant is hereby notified that this International Preliminary Examining Authority transmits herewith the international preliminary examination report and its annexes, if any, established on the international application.
2. A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.
3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translation to those Offices.


4. REMINDER

The applicant must enter the national phase before each elected Office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices) (Article 39(1)) (see also the reminder sent by the International Bureau with Form PCT/IB/301).

Where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary examination report. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.

For further details on the applicable time limits and requirements of the elected Offices, see Volume II of the PCT Applicant's Guide.

Name and mailing address of the IPEA/	Authorized officer
---------------------------------------	--------------------

 <p>European Patent Office D-80298 Munich Tel +49 89 2399 - 0 Tx 523656 epmu d Fax +49 89 2399 - 4465</p>	<p>Ipinazar, P</p> <p>Tel +49 89 2399-8131</p>
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BMSD010 - 855A/153617MA.

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference P22101/HGR/GMU	FOR FURTHER ACTION <small>(see Notification of Transmittal of International Search Report Form PCT/ISA 220) as well as, where applicable, item 6 below</small>	
International application No. PCT/GB 99/02029	International filing date (day/month/year) 28/06/1999	(Earliest) Priority Date (day/month/year) 27/06/1998
Applicant ERT LIMITED et al.		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of **4** sheets.
☒ It is also accompanied by a copy of each prior art document cited in this report.

1 Basis of the report

- a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item:

☐ the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

- b. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international search was carried out on the basis of the sequence listing:

☐ contained in the international application in written form

☐ filed together with the international application in computer readable form

☐ furnished subsequently to this Authority in written form

☐ furnished subsequently to this Authority in computer readable form

☐ the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

2. ☐ **Certain claims were found unsearchable** (See Box I)

3. ☐ **Unity of invention is lacking** (see Box II)

4. With regard to the **title**,

☐ the text is approved as submitted by the applicant

☒ the text has been established by this Authority to read as follows:

COALESCER

5. With regard to the **abstract**,

☐ the text is approved as submitted by the applicant

☒ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box II. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the **drawings** to be published with the abstract is Figure No.

☐ as suggested by the applicant

☐ because the applicant failed to suggest a figure

☒ because this figure better characterizes the invention

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☐ None of the figures